
Austral Hepaticae 29. More New Taxa and Combinations in *Telaranea* (Lepidoziaceae) and a New Name for *Frullania caledonica* (Schuster) Schuster (Frullaniaceae) from New Caledonia

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ABSTRACT. *Telaranea consobrina*, *T. fragilis*, and *T. palmata*, new species from Australasia, are described and illustrated. *Telaranea clatritexta* (Stephani) Engel & Merrill and *T. quadricilia* (Stephani) Engel & Merrill of Australasia and *T. fernandeziensis* (Stephani) Engel & Merrill from Juan Fernández are new combinations. *Frullania neocaledonica* of New Caledonia is proposed as a new name for *Frullania caledonica* (Schuster) Schuster, an illegitimate name.

The following new taxa and new combinations, together with those previously published (Engel & Merrill, 1995), are the result of a phylogenetic study of the genus *Telaranea*, which is currently in preparation by the authors. The names are here published separately to make them immediately available for use. Studies on Australasian Hepaticae have also revealed a nomenclatural change required in the genus *Frullania*.

Telaranea clatritexta (Stephani) Engel & Merrill, comb. nov. Basionym: *Lepidozia clatritexta* Stephani, Spec. Hep. 3: 583. 1909. TYPE: Australia. Western Australia: Swan River, *Drummond*, ex Herb. Kew (G).

Lepidozia complanata Herzog, Memoranda Soc. Fauna Fl. Fenn. 27(1950–1951): 92. fig. 39. 1952. Syn. nov. *Telaranea complanata* (Herzog) Engel & Merrill, Phytologia 79: 251. 1995 [June 1996]. TYPE: Australia. Western Australia: without specific loc., *Goebel* (holotype, not seen).

In a previous paper (Engel & Merrill, 1995), we published the combination *Telaranea complanata* (Herzog) Engel & Merrill. Further studies have revealed that *Lepidozia clatritexta* Stephani is the same taxon, and a transfer to *Telaranea* is therefore required.

Telaranea consobrina Engel & Merrill, sp. nov. TYPE: Tasmania. Eastern slope of Black Bluff just below summit, S of Burnie, 1250 m, 21 Mar. 1977, *Engel 15799* (holotype, F; isotype, HO). Figure 1.

Species nova *T. meridiana* affinis disco folii basin versus 8 cellulis lato, lobis angustioribus, amphigastriis latioribus brevioribusque, hyalodermate conspicuo differt.

Plants soft and flexuous, ascending to suberect, pale green, medium in size, to 6 mm wide, including branches. Branching rather regularly 1-pinnate, the branches of the *Frullania*-type, at times becoming flagelliform; first branch underleaf undivided (very rarely bilobed), broadly acuminate to lanceolate. Ventral-intercalary branches not seen. Stems with cortical cells distinctly differentiated, thin-walled, in 13–14 rows; cortical cells in section slightly to distinctly larger than the numerous (49–53) medullary cells. Leaves on main shoot obliquely spreading, contiguous, the disc plane or weakly convex, the lobes ventrally decurved, the insertion distinctly incubous, the disc broader than high; leaves 475–600 μm wide \times 440–525 μm long, the leaves 4(5)-lobed to 0.4–0.5, the lobes straight to moderately divergent. Lobes narrowly acute to acuminate, 4–5 cells wide at base, often 4 cells wide in basal sector, then biseriate for 2–3 tiers, terminating in a short uniseriate row of 2–3 cells (or sporadically a single cell or 2 laterally juxtaposed cells); lobe cells \pm isodiametric to short rectangular, thin-walled. Leaf disc somewhat asymmetrically cuneate, the disc (5)6–7(8) cells high (from median sinus base to leaf base), 13–16 cells wide in distal portion narrowing to 8(9) cells wide in basal portion. Cells of disc thin-walled, median cells short rectangular, 24–38(42) μm wide \times 42–49 μm long, the cells in \pm irregular rows; cuticle smooth. Underleaves somewhat smaller than leaves, 1.7–2.3 \times stem width, 4(5)-lobed to 0.4–0.45, the lobes narrowly acute, 3–4 cells wide at base and biseriate for 1–2 tiers, ending in a uniseriate row of 2–3 short cells; disc symmetrically broadly cuneate (wider than high), 4–5 cells high (median sinus), 14–18 cells wide. Asexual reproduction lacking.

Androecia and gynoecia not seen.

Taxonomy. This species strongly resembles *T. meridiana* of New Zealand, with broad, almost lon-

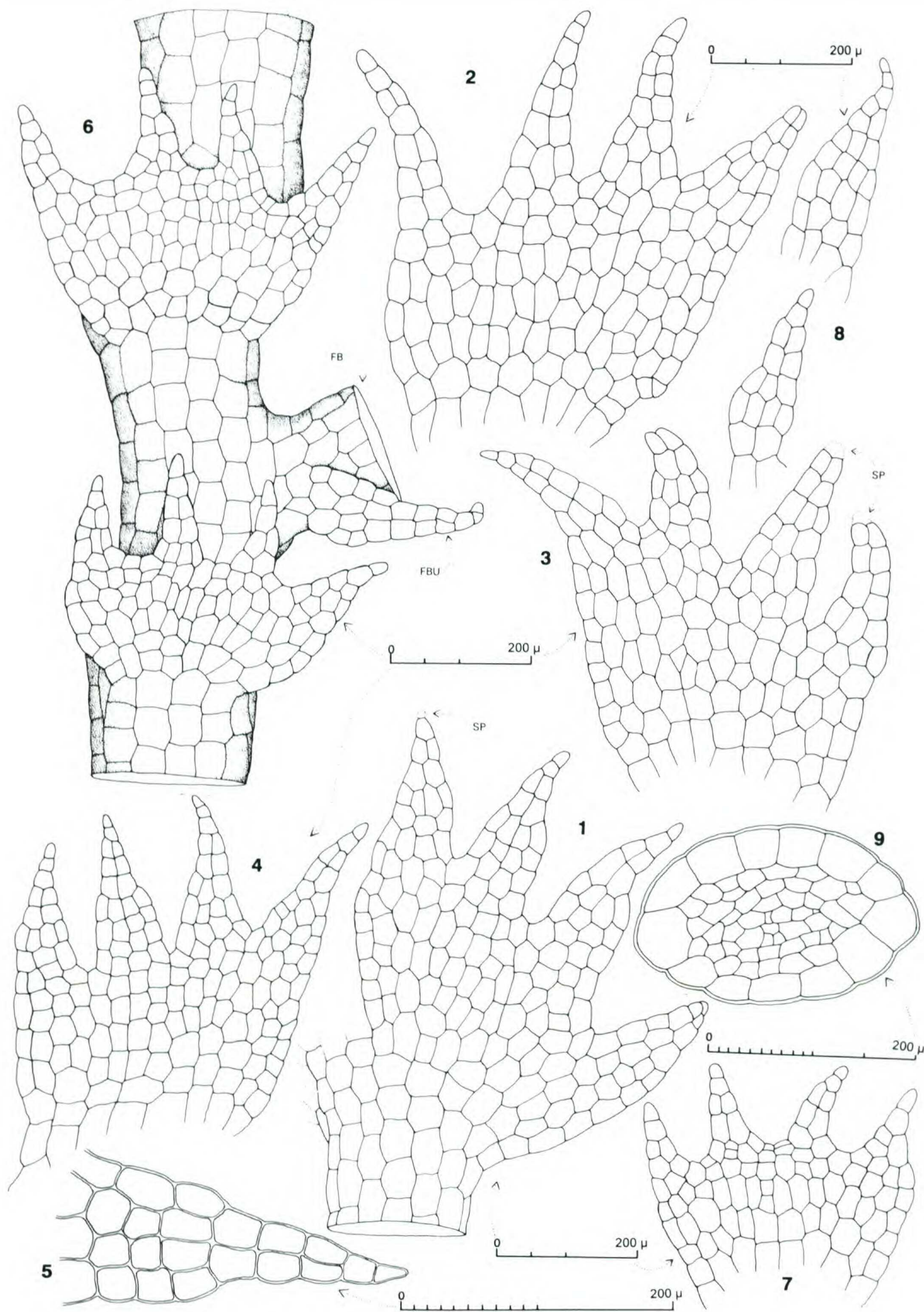


Figure 1. *Telaranea consobrina* Engel & Merrill. —1. Leaf, *in situ*, dorsal view (sp = slime papilla). —2. Leaf. —3. Leaf (sp = slime papilla). —4. Leaf. —5. Leaf lobe. —6. Sector of main shoot with *Frullania*-type branch (= FB; FBU = first branch underleaf), ventral view. —7. Underleaf; note small-celled rhizoid initials in distal part of disc and in basal portion of a lobe. —8. First branch underleaves. —9. Stem, cross section. (All from holotype, *Engel 15799*.)

gitudinally inserted leaves and ventrally decurved leaf lobes. It differs most notably in the shape of the leaf disc, which narrows to 8 cells wide at the insertion (Fig. 1: 1–4) vs. 14–16 cells wide in *T. meridiana*, and in the narrower lobes, which are only 4–5 cells wide at base, and as many as 6(8) cells wide in *T. meridiana*. The underleaves of the Tasmanian plants are larger, roughly 2× the width of the stem (Fig. 1: 6) (vs. 1.2× the stem diameter in *T. meridiana*), and somewhat shorter. As in other *Telaranea* species, the stem cortical cells are few in number and form a conspicuous hyaloderm (Fig. 1: 9).

The epithet *consobrina* (“cousin”) refers to the evident relationship of this Tasmanian species to *T. meridiana* (Hodgson) Hodgson of New Zealand.

Distribution and ecology. The species is known from two stations in Tasmania, occurring in the crevice of a dripping cliff face in an area with alpine vegetation (type locality) and in a creek bed within an area having a mosaic of cushion plants, *Diselma*, scattered pools, and small streams.

Additional specimen examined. TASMANIA. Cradle Mtn.-Lake St. Clair Natl. Park, Plateau Creek area, between Cradle Plateau and Marions Lookout, NNW of Cradle Mtn., 1250 m, Engel 13960 (F).

Telaranea fernandezensis (Stephani) Engel & Merrill, comb. nov. Basionym: *Lepidozia fernandezensis* Stephani, Kongl. Svenska Vetenskapsakad. Handl. 46(9): 63. fig. 24e. 1911. TYPE: Juan Fernández. Mas a Tierra, El Yunque, 24 Aug. 1908, Skottsberg (lectotype, designated by Solari (1987), S).

We have examined the lectotype of *Lepidozia fernandezensis*, and find that this plant belongs to the complex of *Telaranea* species that includes *T. tetradactyla* (Hooker f. & Taylor) Hodgson.

Telaranea fragilis Engel & Merrill, sp. nov. TYPE: New Zealand. North Island: North Auckland Prov., NE Waitakere Ranges, Swanson University Reserve, Tram Valley Road, 95 m, Engel 20465 (holotype, F; isotype, CHR). Figure 2.

Ex affinitate *T. centipedis* foliis fragilibus, disco lateribus parallelis ubique 8 cellulis lato, et serie uniseriata lobi cellulis angustioribus longioribusque distinguenda.

Plants delicate, flexuous, prostrate, glaucous, whitish to bluish green, dull and distinctly water repellent; shoots medium in size, to ca. 1 cm wide, including branches. Branching loosely and irregularly 1-pinnate, the branches of the *Frullania*-type, rarely becoming flagelliform; first branch underleaf

undivided, subulate. Ventral-intercalary branches present. Stems with cortical cells distinctly differentiated, in 9–12 rows, thin-walled; medullary cells ca. 16. Leaves fragile, erose-truncate (the lobes all or mostly broken off, and often the distal tiers of disc cells missing), widely spreading, at times nearly at right angles to stem, distant to loosely imbricate, plane, strongly horizontally oriented, the insertion distinctly incubous; leaves 260–290 µm wide, the fragmented leaf 280–390 µm long (including basal cell of lobe), 465–505 µm long with lobes, leaves subsymmetric, 4-lobed to ca. 0.4, the lobes ± parallel with disc margins or only slightly divergent. Lobes (when present) subcaudate, 2 cells broad at base, terminating in a uniseriate row of 6–7 cells; lobe cells thin-walled, the distal cells of uniseriate row slender, ± elongate. Leaf disc ± symmetrically quadrate to subrectangular, 5–6(7) cells long (from median sinus base to leaf base), mostly 8 cells wide throughout; margins ± straight to weakly arched. Cells of disc in regular longitudinal rows, thin-walled but firm to moderately thick-walled; median disc cells large, subquadrate, 33–45 µm wide, 40–52 µm long; cuticle a finely granular and faintly striate coating. Underleaves much smaller than leaves, 4-lobed to 0.75–0.85, the lobes ciliiform, the cells of uniseriate row 3–4, elongated, thin-walled; disc abbreviated, 2 cells high, 8 cells wide. Asexual reproduction evidently by fragmentation of leaf lobes and disc.

Androecia and gynoecia not seen.

Taxonomy. Hodgson (1956: 606) observed that the leaves of this species “present a curious appearance, in that the apices are either crenulate with protruding cells of the discus, or with 1 or 2 segments showing as reduced to one roundly quadrate cell, sitting as it were on 2 terminal cells of the lengthwise rows,” which aptly describes the leaves of this species (Fig. 2: 7, 10). It is likely that detached lobe and disc cells function as gemmae. Hodgson (1956) cited several populations with these characteristics, and included them under the name *Lepidozia centipes* Taylor.

Telaranea fragilis resembles *T. centipes* in being dull, glaucous, and water-repellent.

Distribution and ecology. Known only from a few scattered sites in North Auckland Province, New Zealand. The species occurs on moist, clayey banks or at times over rock in lowland forests. The type occurred on a vertical clayey bank above a small stream in an old *Kunzea* forest with *Agathis* and (common) *Phyllocladus trichomanoides* Don.

Additional specimen examined. NEW ZEALAND.

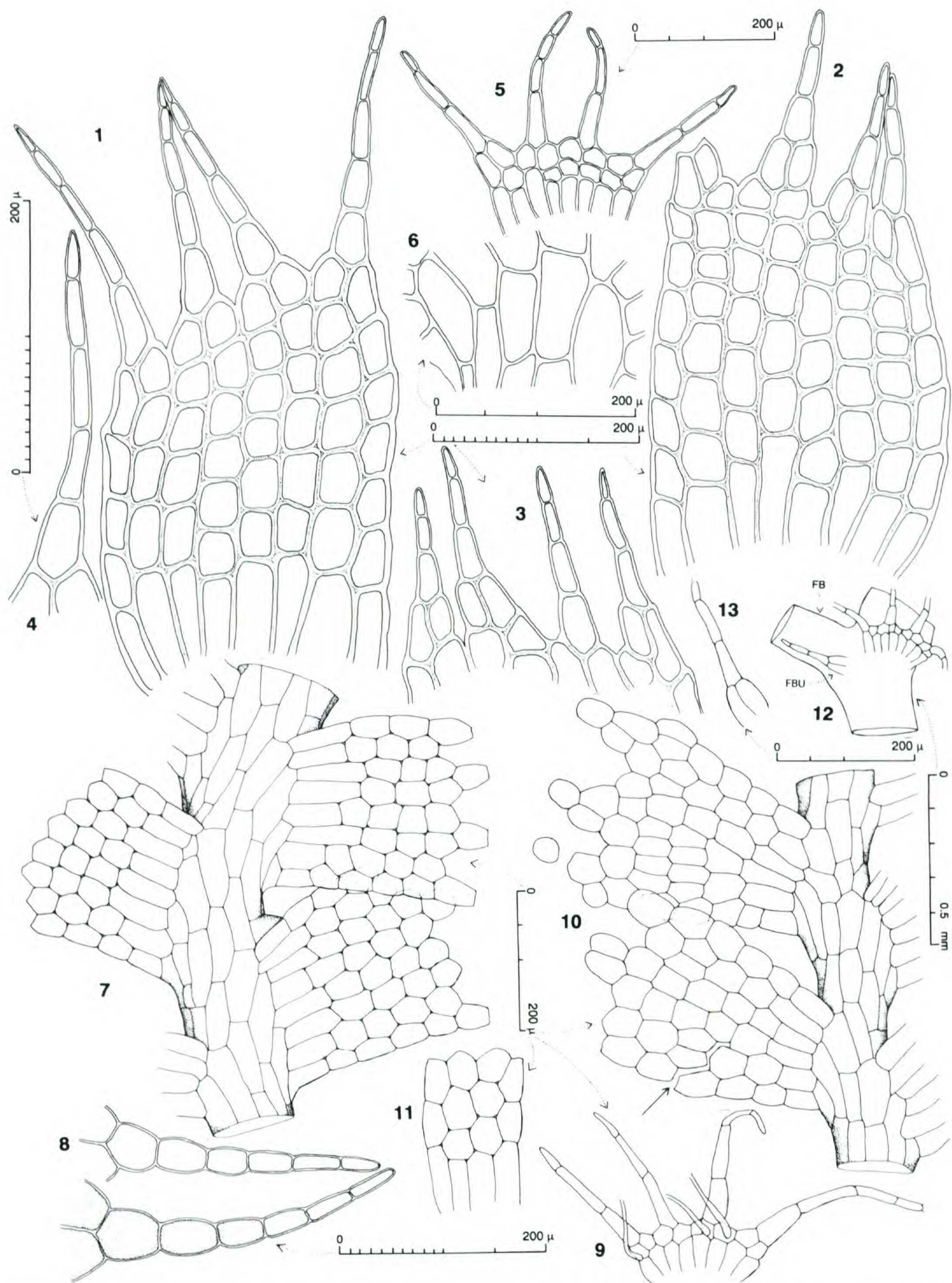


Figure 2. *Telaranea elegans* (Colenso) Engel & Merrill (1–6; see Engel & Merrill, 1995) and *T. fragilis* Engel & Merrill (7–13). —1, 2. Leaves. —3. Distal portion of leaf. —4. Leaf lobe. —5. Underleaf. —6. Stem, surface view. —7. Sector of main shoot, dorsal view. —8. Leaf lobes (cuticle shown in part). —9. Underleaf. —10. Sector of branch showing (top leaf) fragmenting of leaf tip forming a gemmae-like body (at arrow) and (lower leaf) a disc in process of partially breaking away (fracture at arrow). —11. Half-leaf. —12. Branch base (FB = *Frullania*-type branch; FBU = first branch underleaf), the underleaf of main shoot shown in part. —13. First branch underleaf shown in Figure 12. (Figs. 1, 4–6, from type of *T. elegans*, Winkelmann s.n., WELT; 2, 3, from Engel 17216, Australia, New South Wales, Morton Natl. Park, Fitzroy Falls; 7–13, from type of *T. fragilis*, Engel 20465.)

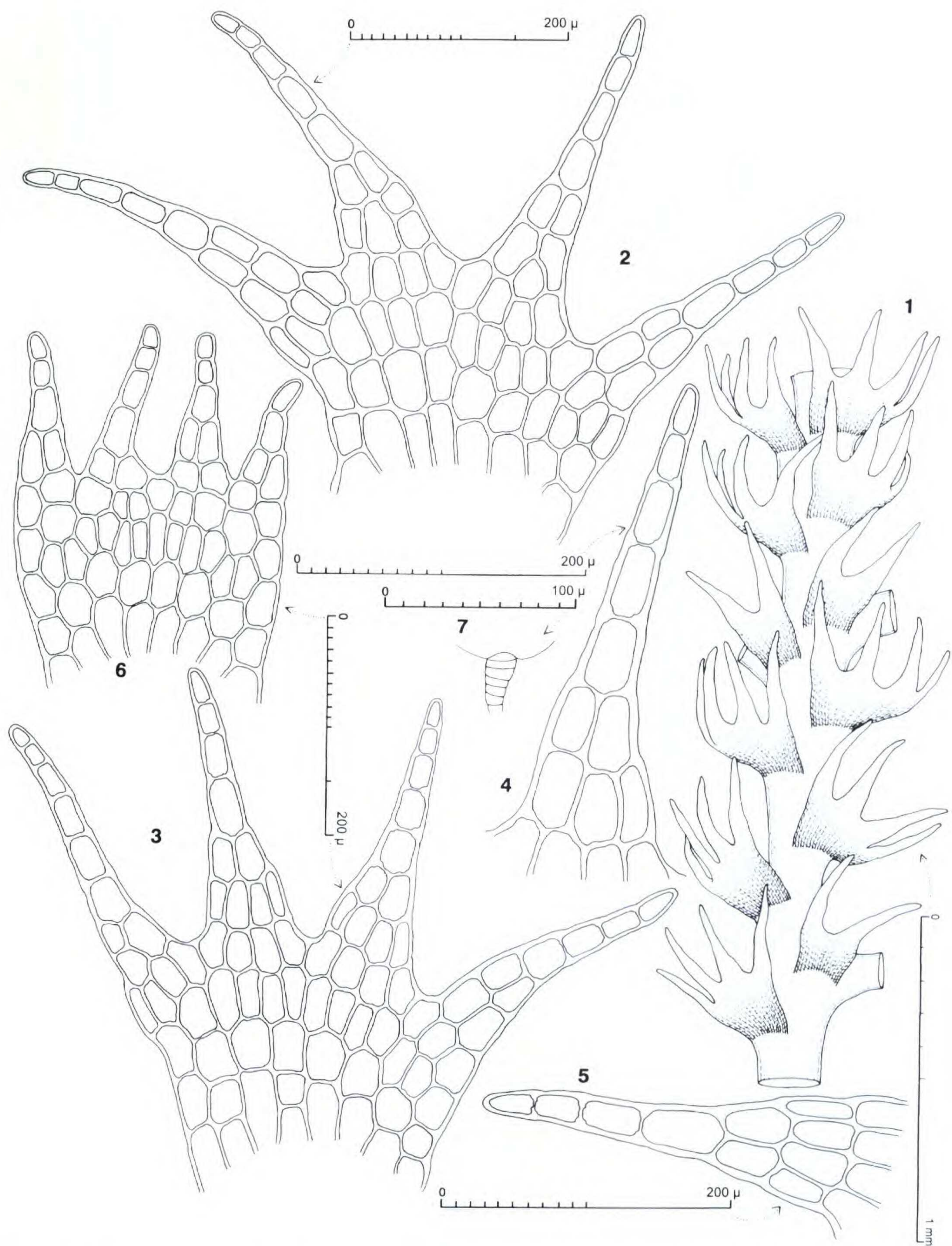


Figure 3. *Telaranea palmata* Engel & Merrill. —1. Portion of main shoot (the terminal branches not shown, but note half leaves), dorsal view. —2, 3. Leaves. —4, 5. Leaf lobes. —6. Underleaf. —7. Antheridial stalk. (Figs. 1–6, from type, *Engel 16251*; 7, from *Engel 19363*, Tasmania, Cradle Mtn.-Lake St. Clair Natl. Park, between Mt. Rufus and Mt. Hugel.)

North Island: North Auckland Prov., Waipoua Forest, *Alison H711* (CHR).

Telaranea quadricilia (Stephani) Engel & Merrill, comb. nov. Basionym: *Lepidozia quadricilia* Stephani, *Species Hepaticarum* 6: 338. 1922. TYPE: Australia. New South Wales, Clarence, *Verreaux* (G).

Telaranea quadricilia is similar to *T. lindenberghii*, but differs by the incubously inserted leaves, the longer leaf lobes, and the papillose cuticle.

Telaranea palmata Engel & Merrill, sp. nov. TYPE: Tasmania. Ridge SE of Black Bluff near junction of access road to plateau area and road to Devonport gold mines, S-facing slope, S of Burnie, 1000 m, *Engel 16251* (holotype, F; isotype, HO). Figure 3.

Telaranea patentissimae affinis foliis palmato-lobatis, insertione foliorum transversa, disco brevior, serie uniseriate loborum longior, et cellulis disci atque loborum incrassatis diversa.

Plants with a rather stiff and wiry appearance, yellowish green; shoots small, to 0.6 cm wide, including branches. Branching somewhat irregularly and loosely 1(2)-pinnate, the branches remaining rather short, the branches of the *Frullania*-type, occasionally to frequently flagelliform; first branch underleaf undivided and subulate. Ventral-intercalary branches common. Stems with cortical cells markedly differentiated, in 12 rows; cortical cells in section larger than the numerous (ca. 50) medullary cells. Leaves on main shoot rigid, the disc widely spreading to squarrose, distant to loosely imbricate, moderately concave to hand-like, the lobes erect and incurved, at times subfalcate, the insertion transverse to weakly incubous; leaves 480–665(700) μm wide (measured between tips of lobes) \times 400–510 μm long, moderately asymmetric, \pm equally palmately 4-lobed to ca. 0.6, the lobes often widely divergent. Lobes attenuate to subcaudate, 2–4 cells wide at base (when 4 cells wide sometimes with an additional 3–4-seriate tier), then biseriate for 1(2) tiers, terminating in a uniseriate row of 4–6 cells; lobe cells \pm firm, often distinctly thick-walled. Leaf disc symmetrically to somewhat asymmetrically short cuneate, 4 (rarely 5) cells high (from median sinus base to leaf base), 13–16 cells wide in distal portion, narrowing to 8 cells wide at the insertion. Cells of disc moderately to distinctly thick-walled, the cells in \pm regular tiers, the median and basal disc cells 31–36 μm wide \times 39–48 μm long; cuticle smooth. Underleaves much smaller than leaves, 4-lobed to ca. 0.5 or a little

more, the lobes divergent, ciliiform, straight, basically 2 cells wide at the base, the cells of uniseriate portion 3(4), slightly elongated; disc symmetrically subquadrate to weakly cuneate, 3(4) cells high (median sinus); disc 8–11 cells wide in distal portion, 8 cells wide at base. Asexual reproduction lacking.

Androecia and gynoecia not seen.

Taxonomy. This species differs from most *Telaranea* species in the transverse insertion of the leaves (Fig. 3: 1). The leaves of this species are palmately lobed (to 0.6) like those of *T. praenitens* (Lehmann & Lindenberg) Hodgson, hence the name. However, the cuticle of *T. palmata* is smooth vs. distinctly striate papillose in *T. praenitens*.

Distribution and ecology. Endemic to Tasmania, and, for the most part, a subalpine-alpine species, occurring above 1000 m in protected, moist niches. The type is from 1000 m elevation in a mosaic of *Gymnoschoenus* (button grass), subalpine shrubs, *Nothofagus cunninghamii* (Hooker) Oersted, and rocky outcrops.

Additional specimens examined. TASMANIA. Mt. Field Natl. Park, Tarn Shelf, below and E of Rodway Range, 1270 m, *Engel 14358* (F); Cradle Mtn.-Lake St. Clair Natl. Park, Lake St. Clair area, between Mt. Rufus and Mt. Hugel, 1120–1130 m, *Engel 19363* (F).

Frullania neocaledonica Engel, nom. nov. Replaced name: *Frullania caledonica* (Schuster) Schuster, *Hep. Anthoc. No. Amer.* 5: 34. 1992; non Gottsche ex Stephani, *Hedwigia* 33: 156. 1894. *Neohattoria caledonica* Schuster, *J. Hattori Bot. Lab.* 33: 291. 1970. TYPE: New Caledonia. Mt. Mou, *Compton*.

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